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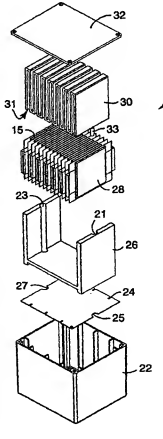
(54) Title: TEMPERATURE CONTROL APPARATUS AND METHOD FOR HIGH ENERGY ELECTROCHEMICAL CELLS



(57) Abstract: An apparatus and method provides cooling for electrochemical cells of an energy storage device. A number of electrochemical cells are arranged in a spaced apart relationship, each having opposing first and second planar surfaces and being subject to volumetric changes during charge and discharge cycling. A cooling bladder provides temperature control for the energy storage device. The cooling bladder is formed of a conformable thermally conducting material and includes inlet and outlet ports. The cooling bladder conforms to maintain contact with at least the first planar surface or the second planar surface of each cell during volumetric changes of the cells. A heat transfer medium passes between the inlet and outlet ports of the cooling bladder to control an operating temperature of the cells. The cooling bladder can be pressurized to maintain the cells of the energy storage device in a state of compression during charge and discharge cycling.

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